

**STATEMENT OF WORK**  
**TH- Main Gate guards' station renovation**  
**PROPERTY OBO-136**  
**Townhouses Compound**  
**U.S. EMBASSY KHARTOUM, SUDAN**

## **1. Description of Services:**

The US Embassy Khartoum has a requirement to renovate the Main Gate guards' area at Townhouses Compound, known as OBO # 136 in Garden city district, Khartoum. The works shall be done as per drawings, scope of work, specifications and General contract conditions. This project requires an experienced contractor to design and execute the job.

The Contractor shall provide all labor, material, tools, equipment, supervision and other related items required to complete the project as per scope of work, specifications and attached drawings.

Contractors are advised to visit the site, verify the existing site conditions to develop their proposal.

## **2. REFERENCE STANDARDS**

### **1.3 REFERENCES**

A. American Society for Testing and Materials (ASTM):

1. ASTM C 33, Standard Specification for Concrete Aggregates.
2. ASTM C 67, Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile, Section 8, Freezing and Thawing.
3. ASTM C 136, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
4. ASTM C 140, Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.
5. ASTM C 144, Standard Specification for Aggregate for Masonry Mortar.
6. ASTM C 936, Standard Specification for Solid Concrete Interlocking Paving Units.

B. Interlocking Concrete Pavement Institute (ICPI):

1. ICPI Tech Spec Technical Bulletins

## **3. SUBMITTALS**

A. Product Data: Submit manufacturer's product data for interlocking tiles, including preparation and application instructions.

B. Samples: Submit manufacturer's samples of standard colors.

C. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.

D- A general description of the misting system and drawings of the main components.

E- Manufacturer's technical literature with installation and storage instructions for each product specified.

F- pumps: pump performance curves indicating GPM vs. TDH, maximum efficiency point, and maximum amperage draw, together with current characteristics and service factor of motor.

## **4. SCOPE OF WORK**

1- The contractor shall dig to a depth of 40 cm at least below the F.F.L. in area "A" – the east guards' shack as shown on diagram. The contractor shall put mechanically compacted red modified soil in layers. Each layer shall not exceed 25 cm in thickness.

The contractor shall furnish and install interlocking tiles to pave the west side of the southern driveway. The tiles shall be of Turkish interlocking tiles of high quality, or similar quality approved by the COR, with thickness not less than 8 cm. The shape and color shall be similar to the existing tiles in the driveway. The tiles shall be laid on a mixed layer of sand and cement not more than 5 cm to the ratio of 3:1. The grouting shall be of cement mortar. The total area is around **45 meters square**

2- The contractor shall dig to a depth of 40 cm at least below the F.F.L. in area "B" to be as the trash area box as shown on diagram. The contractor shall put mechanically compacted red modified soil in layers. Each layer shall not exceed 25 cm in thickness.

The contractor shall furnish and install interlocking tiles to pave the east side of the southern drive way. The tiles shall be of Turkish interlocking tiles of high quality, or similar quality approved by the COR, with thickness not less than 8 cm. The shape and color shall be similar to the existing tiles in the driveway. The tiles shall be laid on a mixed layer of sand and cement not more than 5 cm to the ratio of 3:1. The grouting shall be of cement mortar. The total area is around **14 sq. meters**

2- The works shall include furnishing and placing curbstones on a base of concrete mix at the sides of the interlocking tiles on both sections "A" & "B" as shown in diagram. The curbstones shall be of NIBCO, or similar quality as approved by the COR, with size 45X 25 X 12.5 cm. The shape shall be similar to the existing shape. The grouting shall be of cement mortar. The length of the curbstones is **around 25 ML.**

3- The contractor shall fabricate and install new LGF shed. The sizes shall be as in diagram

a-The columns shall be made of 14 cm I sections. The clear height shall be at least 2.8 m. The area is around 34 meters.

b- The size of the footing shall be 0.8m X 0.8m X 1 m. The reinforcement shall be single mesh of 16 mm deformed bars @ 20 cm spacing. The anchor bolts shall be 20 mm bolts. The base plate shall be 8 mm at least. The short column reinforcement shall be four 16 mm, with 8 mm stirrups @ 30 mm.

c- The roof shall be mono pitched roof made of red corrugated galvanized sheets, (roof curved tiles shape), 0.5 mm thick at least. The frame work of the trusses shall be made of steel pipes 10 X 5, with 3 mm thick at least. The exposed sides south, west side of the truss shall be covered with the corrugated sheets. The slope of the roof shall be 1:10 to the east side, mono pitched.

The contractor shall install suspended ceiling tiles 60 cm X 60 cm with Rockwool insulation layer on top at least. The height of the suspended ceiling shall be at 2.4 m from the F.F.L.

### **3- The misting system**

- 1- The contractor shall be responsible to provide and install high pressure flexible misting system in the LGF shed, next to the Main CAC in the townhouses compound
- 2- The misting line for the system is around 24 meters. The misting system will be hanged around the columns area as shown in the diagram.

### **3.1 The system shall include the following items**

1- High pressure misting system pumps at least (1000 PSI High Pressure Pump). The pump shall be 220 V, 50 HZ, 1 phase. The pump shall supply 2 gallon per minute at least. The High efficiency pump module with built-in POLY-PHOSPHATE FILTER and GFCI shock protection. The pump shall be in Powder coated steel enclosure with pressure gauge.

#### **The pump shall be equipped with the following items**

- Automatic Pressure Release : When the spray stops the pressure is automatically released from the hose to prevent leaking/dripping nozzles
- Control System: Dual timer assembly with settings for minutes and seconds to set the exact misting and stop times desired.
- Pressure Switch: The pump will automatically stop when the water supply is interrupted, protecting the pump from damage.
- Inlet Filter: 0.1mm mesh filter prevents debris from entering the pump. Stainless steel for easy cleaning.
- Motor: Low-noise motor with Low power consumption, but strong enough to create a natural fog effect.

2- Nylon 11 tubing (Black/ white) Coil 3/8' poly hose - 1000 PSI rated. Tubing will be painted to match the color of walls.

3- Misting Tee brass Nozzles, 0.008" nozzle orifice. The nozzles intervals shall be at adjusted to cover the whole line, not more than 0.75 meters intervals.

4- All necessary hardware to install complete misting system and its accessories( end caps, elbows, Tees, unions, couplings, Tube Cutters, Rubber Mounting Clamps, Nickel Plated Slip-Lock Fittings, Drain Valve, Replacement Misting Nozzles and Plugs)

### **3.2 Installation**

A- The contractor shall install the system according to the manufacturer's recommendations to cover the areas as shown in drawing. The height of the tubes is around 2.4 meters. The new nylon pipes shall be fixed inside the conduits.

B- The contractor shall be responsible to connect the new mister system pump to the nearest water supply and the electrical source as shown in diagram. The contractor shall carry out all the construction works as approved by the COR. The contractor shall conceal all the system

parts. All the wiring, pipes, metal and electrical conduits, fittings shall comply with Building embassies, US and local standards.

5- The contractor shall readjust the leveling of all the drainage, plumbing manholes and trenches in the areas to match the new level of the interlocking tiles.

6- The contractor shall maintain existing utilities indicated to remain and protect them against damage during the works. Damages caused by demolition and renovation operations, shall be repaired by the contractor at no additional cost to the Government.

7- The contractor shall transport from site all debris, rubbish, and materials resulting from demolition operations and dispose off site on a daily basis in accordance with local regulations.

## **Conditions of Contract**

### **1. General**

This is a firm fixed price turnkey job for the entire work and amount quoted shall include all work described in attached drawing, scope of work and general condition of contract. The lump sum price quoted shall be fixed and nothing extra will be entertained on any account.

Contractor's staff is subject to such restriction for entry and exit as are required by the Embassy's security requirement. Contractor's staff will be subject to security cleared as required by the Embassy.

Contractor shall restore all surfaces disturbed by construction to match with existing finish.

Any deviation from the original contract/scope of work shall be informed to COR before work begins. No additional work or changes will be carried out without a contract modification.

### **2. Responsibilities of Contractor**

Contractor shall be responsible for procuring, supplying, transporting, and providing all labor, materials, tools and plant and equipment etc., required for completion of the work in all respects and as per the scope of the work.

All expenses towards mobilization at site and demobilization including bringing in equipment, workforce and materials, dismantling the equipment, clearing the site etc. shall be deemed to be included in the rates quoted by the contractor against various items of schedule of rates and no separate payment on such expenses shall be entertained.

Contractor shall employ and provide one full time engineer to supervise the project and has experienced of carrying out such type of work.

Contractor shall not proceed with next activity until previous activity will be checked and approved by COR. Contractor shall mentioned all inspection dates in the schedule chart

Contractor should keep the site clean and accessible to Embassy employee all time

### **3. Specifications**

Work under this contract shall be carried out strictly in accordance with specifications attached and will meet US and Local codes.

### **4. Execution of Work**

The Contractors are advised to review the material specifications and scope of work. The Contractor should visit and walk through the site to familiarize themselves with the site conditions to understand the exact quantum of work.

On award of the work, Contractor shall submit all items below via email:

- a. Bar chart within 3 days for approval by the Contracting Officer Representative (COR). All dates and time schedule agreed upon should be strictly adhered to. Contractor shall notify the COR in advance regarding anticipated problems through the project.
- b. Proposed start date
- c. Weekly schedule/activity plan for the duration of the project *prior to the start date*.

For dismantling/blocking or making connection to any existing services or any shut-down, contractor shall inform the COR at least three working days in advance and proceed with the work only after the permission from the COR.

**The duration of the project shall be 20 working days.**

### **5. Materials**

All materials used on this work shall be new and conforming to the contract specifications as per US and local codes.

Materials shall conform to the latest US Standards specifications as amended to date and carry certification mark. Contractor shall submit material samples and catalog for pre-approval.

All materials used on the project shall be approved by the Contracting Officer Representative (COR) before use. Any changes/substitutes on material shall be approved by COR before proceeding.

## **6. Storage of Materials**

All materials shall be stored in a proper manner protected from natural elements so as to avoid contamination and deterioration.

## **7. Site Clearance and Cleanup**

The Contractor shall clear away all debris and excess materials accumulated at the site and dispose of it away from Embassy premises, maintaining a neat site condition.

On completion of project, Contractor shall remove all surplus materials and leave the site in a broom clean condition.

## **8. Workmanship**

Workers working on the site shall be skilled in their job and have related job experience.

## **9. Working Hours**

Working hours shall be 8:30 A.M. to 4:30 P.M Sunday to Thursday. No work shall be done on Fridays, Saturdays and holidays without the prior approval of the Contracting Officer.

## **10. Security Clearance**

The Contractor shall inform and provide in writing transportation details (vehicle registration number, drivers name, and date of delivery) to the COR at least 24 hours in advance for material deliveries.

Contractor shall give workers names at least 3 days in advance to get the security clearance. All the workers shall have an official photo ID or photo ID with the company name on it.

## **11. Safety**

Contractor is responsible and shall continue management and implementation of a safety and health program throughout construction.

The Contracting Officer and the Post Occupational Safety and Health Officer [OSHA] reserve the right to suspend work when and where Contractor's safety and health program is considered to be operating in an inadequate or non-complying manner.

Contractor shall provide all Personal Protective Equipment for the workers as per the requirement of the site. Work will be stopped in case the proper protection equipment is not found with the workers and the lapse of time shall be at the Contractor's expense.

Contractor will not leave the work site in an unsafe condition or any other condition that might cause injury to personnel, damage to existing work, plants or equipment.

Contractor will use all safety gadgets e.g. hard hats, cotton gloves and goggles as required on site to avoid the accident.

Any equipment or work considered dangerous shall be immediately discontinued.

## **11. Warranty**

The contractor shall guarantee that all work performed will be free from all defects in workmanship and materials and that all installation will provide the capacities and characteristics specified. The contract further guarantees that if, during a period of three years from the date of the certificate of completion and acceptance of the work, any such defects will be repaired by the contractor at his expenses.

TH-Main Gate guards' station renovation BOQ					
	Item	count	unit	unit cost	Total Cost
	Area "A" East side guards' shack				
1	soil works for Area 'A"	18	M3		
2	Interlocking tiles for Area "A"	45	M2		
3	curbstones works for area "A"	15	ML		
	Area "B" ( trash area)				
4	soil works for Area 'B"	5	M3		
5	Interlocking tiles for Area "B"	14	M2		
6	curbstones works for area "B"	10	ML		
	Area "C" ( the Main gate LGF western shed) as specified in the SOW and specs				
7	Foundation works for the shed	6	units		
8	Steel works for the shed	34	M2		
9	Corrugated sheets	34	unit		
10	Misting system	24	ML		
11	Miscellaneous				
	TOTAL				